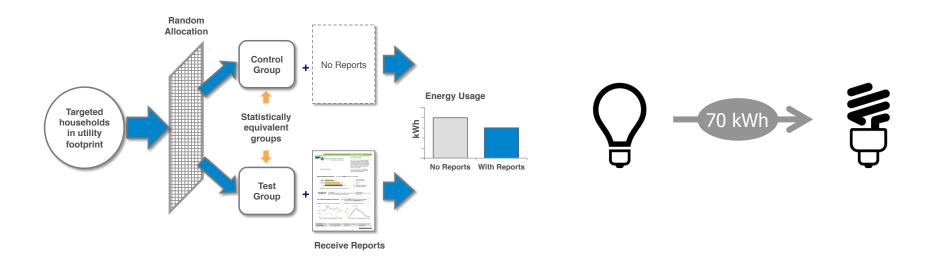
# How to Count Behavioral Savings in Michigan



## Behavior and hardware have different approaches to measuring savings

Behavior savings are measured *ex post* using experimental design

Hardware savings are deemed *ex ante* using a database of approved values





## Deem and verify, a hybrid approach

#### **Process**

2. Calculate savings 1. MEMD 3. Measure savings 4. Adjust savings Measure actual Adjust program savings using savings for Model savings of Include behavior in program for first second year experimental **MEMD** design to verify based on first vear calculations year results

#### **Example calculations**

MEMD methodology	Savings calculation**	Actual savings	Adjusted savings
Savings Total rate <b>x</b> usage	1% x 1,000 kWh	Treatment - Control =	1.5% x 1,000 kWh
(%) (kWh)	10 kWh savings	15 kWh savings	15 kWh savings

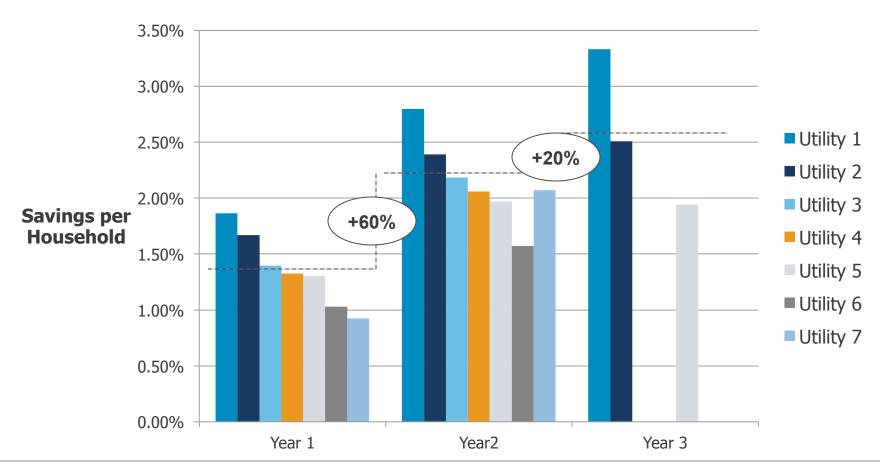
<sup>\*\*</sup> All savings figures and calculations are demonstrative abstractions, rather than real numbers



## **Results Improve Over Time**

Results from 7 Midwest deployments show consistent improvement from Year 1 to Year 2, and continued improvement in Year 3

#### **Savings Rates Over Time, Midwest Deployments**





## **Proposal: Electric High Usage Band**

**DTE and Consumers Y1 program results (electric)** 

	Consumers	DTE	Michigan
Savings Rate	1.1%	1.3%*	1.2%**
Average Usage	10,555 kWh	9,190 kWh	9k - 11k kWh (Usage Band)
MEMD Savings (% or kWh)	127 kWh	110 kWh	1.2% x Usage (w/in band)

<sup>\*\*</sup> Michigan-wide savings figure based on average of results from Consumers and DTE results



<sup>\*</sup> DTE annual results are extrapolated from 10-months of data; savings rate for 10-months is 1.2%

## **Proposal: Electric Average Usage Band**

DTE and Consumers Y1 program results adjusted for average usage in territory (electric)

	Consumers	DTE	Michigan
Savings Rate	0.95%	1.15%*	1.05%**
Average Usage	8,264 kWh	8,179 kWh	7k - 9k kWh (Usage Band)
MEMD Savings (% or kWh)	87 kWh	86 kWh	1.05% x Average Usage

<sup>\*\*</sup> Michigan-wide savings figure based on average of results from Consumers and DTE results



<sup>\*</sup> DTE annual results are extrapolated from 10-months of data; savings rate for 10-months is 1.2%

## **Proposal: Gas Usage Band**

**DTE and Consumers Y1 program results (gas)** 

	Consumers	DTE	Michigan
Savings Rate	0.72%	0.55%*	0.64%**
Average Usage	933 therm	1,096 therm	900 – 1,100 therm (Usage Band)
MEMD Savings (% or therm)	5.9 therm	7.1 therm	0.64% x Usage (w/in band)

- \* DTE annual results are extrapolated from 10-months of data; savings rate for 10-months is 1.2%
- \*\* Michigan-wide savings figure based on average of results from Consumers and DTE results



## **MEMD Roadmap**

#### **Required Values for MEMD**

	Y1	Y2	<b>Y3</b>
Opower Electric (9k – 11k kWh Usage)	1.2%	TBD	TBD
Opower Electric (7k - 9k kWh Usage)	1.05%	TBD	TBD
Opower Gas (900 - 1,100 therm Usage)	0.64%	TBD	TBD

In the event values have not yet been established and entered into the MEMD, utilities to use modeled savings in their regulatory filings until true-up occurs.

## **MEMD Update Process**

2012 2014 2013 Aug 2014 **Sept 2014 Sept 2012 Aug 2013 Sept 2013** Include Y3 Measure Include Y1 Measure Include Y2 Y3 savings savings Y2 savings savings savings results via value in value in results via value in **MEMD** program MEMD **MEMD** program



evaluation

evaluation

## **Benefits of Deem and Verify Approach**

### **Summary**

The deem and verify hybrid approach:

- » Provides consistency with both the existing approach in Michigan and the accepted best practice for behavioral programs
- » Creates certainty for regulatory treatment of behavioral programs similar to the certainty that applies to hardware
- » Uses experimental design to verify savings values on an ongoing basis
- » Provides a mechanism for adjusting savings as needed going forward

